Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) An apparatus allowing for the dynamic allocation of network resources among a plurality of users, comprising

a partition object space storing a plurality of partition objects; the plurality of partition objects including at least one user partition object having at least one attribute defining an allocation of a network resource across all data flows corresponding to a user;

a partition management module operative to:

identify new users based on at least one packet attribute of packets in data flows;

dynamically create a user partition object in the partition object space in response to an identification of a new user, and

a partitioning mechanism operably connected to a path transmitting data packets between a network resource and a plurality of respective users,

wherein the partitioning mechanism is operative to:

associate users with corresponding user partition objects, and

enforce the respective network resource allocations defined in the user partition objects.

2. (original) The apparatus of claim 1 wherein the partition management module is further operative to delete inactive user partition objects from the partition object space.

3. (currently amended) The apparatus of claim 2 wherein the partition management module is operative to reclaim ~~delete inactive~~ user partition objects from the partition object space as required for new users.

4. (original) The apparatus of claim 2 wherein an inactive user partition object is identified in relation to a threshold period of inactivity.

5. (original) The apparatus of claim 3 wherein an inactive user partition object is identified in relation to a threshold period of inactivity.

6. (previously amended) The apparatus of claim 1 wherein the partition objects further include at least one dynamic partition object having at least one attribute defining a first allocation of a network resource and at least a second attribute operable to control allocations of the network resource within the first allocation; wherein the partition management module creates a user partition object defining a user partition according to the at least a second attribute of a corresponding dynamic partition object.

7. (original) The apparatus of claim 6 wherein each dynamic partition object is associated with a characteristic of the data packets transmitted in the communication path, wherein the partition management module is operative to identify the dynamic partition object associated with a data packet and create a corresponding user partition object.

8. (currently amended) An apparatus allowing for the dynamic allocation of network resources among a plurality of users, wherein the network resources and the users are operably connected to a computer network, comprising

a partition object space storing a plurality of partition objects; the plurality of partition objects including at least one dynamic partition object and at least one user partition object;

a traffic class database storing traffic classes in association with corresponding dynamic partition objects;

wherein the at least one dynamic partition object has at least one attribute defining a first allocation of a network resource to a corresponding traffic class and at least one attribute defining a second allocation, within the first allocation, of the network resource across all data flows corresponding to a user;

wherein the at least one user partition object has at least one attribute defining an allocation of the network resource to a user;

a partitioning mechanism operably connected to the computer network to receive and transmit data flows, the partitioning mechanism further operative to:

identify a new data flow and the traffic class associated with the data flow; and,

a partition management module operative to, in response to a new data flow:

identify the dynamic partition object associated with the traffic class of the new data flow;

identify a new user based on one or more attributes of at least one packet of ~~associated with~~ the data flow;

dynamically create a user partition object in the partition object space in response to an identification of a new user according to the attributes of the dynamic partition object associated with the new data flow;

return a partition object to the partitioning mechanism;

wherein the partitioning mechanism is further operative to enforce the allocations defined in the user partition objects to control access to the network resource among a plurality of users.

9. (original) The apparatus of claim 8 wherein the partition management module is further operable to reclaim inactive partition objects from the partition object space.

10. (currently amended) An apparatus operable to dynamically allocate access to a network resource among a plurality of users, comprising:

a partition management module operative to

identify new users based on at least one attribute of packets in data flows;

dynamically create partition objects, in a memory space supporting a finite number of partition objects, ~~partitions~~ in response to the new users,

wherein the partition objects each define a partition including at least one parameter for managing aggregate bandwidth across all data flows corresponding to a given user; and,

a partitioning mechanism operative to enforce the partitions defined in the partition

objects to control access to a network resource among a plurality of users, ~~wherein the partitions each define at least one parameter for managing aggregate bandwidth across all data flows corresponding to a given user~~.

11. (currently amended) A computer-implemented method allowing for dynamic allocation of a network resource, the method comprising the steps of:

(a) recognizing a new user of a network resource based on one or more attributes of at least one packet in a data flow;

(b) creating a partition on demand for the new user, wherein the partition is operable to allocate utilization of the network resource across all data flows corresponding to the new user; and,

(c) disposing of the partition when no longer needed.

12. (original) The method of claim 11 wherein the disposing step comprises the steps of reclaiming the partition for a subsequent new user if the partition is inactive.

13. (previously amended) The method of claim 11 further comprising receiving a set of parameters defining the partition.

14. (original) The method of claim 11 wherein the partition is configurable based on a characteristic of the user's utilization of the network resource. --

15. (original) The method of claim 11 wherein the partition is operable to provide a minimum allocation of the network resource to the new user.

16. (original) The method of claim 11 wherein the partition is operable to limit utilization of the network resource.

17. (previously amended) The method of claim 11 wherein the partition is implemented by class-

based weighted fair queuing functionality.

18. (original) The method of claim 11 wherein the partition is implemented by committed access rate functionality.

19. (currently amended) A computer-implemented method allowing for dynamic allocation of a network resource, the method comprising the steps of:

(a) recognizing a new user of a network resource based on one or more attributes of at least one packet in a data flow;

(b) dynamically creating an allocation of the network resource on demand for the new user, wherein the allocation is applied across all data flows corresponding to the new user; and,

(c) disposing of the allocation when no longer needed.

20. (currently amended) A computer-implemented method allowing for dynamic allocation of network resources, the method comprising the steps of

recognizing new users of a network resource based on one or more attributes of at least one packet in a data flow;

creating user partitions on demand for new users, wherein each user partition is operable to allocate utilization of a network resource across all data flows corresponding to a user; and,

reclaiming inactive user partitions for subsequent new users.

21. (original) The method of claim 20 wherein inactive partitions are reclaimed when necessary for subsequent new users.

22. (original) The method of claim 20 wherein inactive partitions are reclaimed automatically.

23. (currently amended) The method of claim 20 further comprising the steps of

receiving a set of parameters defining a user partition and a partition cap parameter defining a desired limit on the number of user partitions; and

wherein the creating step ~~(e)~~ is conditioned on the number of existing user partitions not exceeding the partition cap.

24. (original) The method of claim 23 further comprising the steps of

receiving a set of parameters defining an overflow partition; and

assigning new users to the overflow partition, if the number of user partitions exceeds the partition cap.

25. (currently amended) A computer-implemented method allowing for dynamic allocation of network resources, the method comprising the steps of

recognizing new users of a network resource based on one or more attributes of at least one packet in corresponding data flows;

dynamically creating partitions in a partition object space on demand for the new users, wherein each partition is operable to control utilization of a network resource across all data flows corresponding to a given user;

monitoring use of the partitions; and,

reclaiming inactive partitions in the partition object space for subsequent new users, as needed.

26. (currently amended) A computer-implemented method facilitating the dynamic allocation of network resources, the method comprising the steps of:

(a) recognizing a new user based on one or more attributes of at least one packet in ~~associated with~~ a data flow;

(b) associating a traffic classification to the data flow;

(c) creating a partition on demand for the new user, wherein the traffic classification determines the parameters of the partition, and wherein the partition defines at least one parameter for managing aggregate bandwidth across all data flows corresponding to a given user;

(d) associating the partition with the data flow; and,

(e) disposing of the partition when no longer needed.

27. (original) The method of claim 26 wherein the disposing step comprises reclaiming the partition for a subsequent new user.